

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

| | | |
|--|--|--|
| International application No. PCT/JP2005/009592 | International filing date (day/month/year) 19.05.2005 | Priority date (day/month/year) 19.05.2004 |
|--|--|--|

International Patent Classification (IPC) or both national classification and IPC
G03G15/08

Applicant
CANON KABUSHIKI KAISHA

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/009592

4AFA
AP20 Rec'd PCT/PTO 24 JUL 2005

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/JP2005/009592

Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ not paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
 - ☐ the parts relating to claims Nos.

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|-------------|--------------------------|
| Novelty (N) | Yes: Claims | |
| | No: Claims | 1-6, 8, 10, 12-15, 17-22 |
| Inventive step (IS) | Yes: Claims | |
| | No: Claims | 1-24 |
| Industrial applicability (IA) | Yes: Claims | 1-24 |
| | No: Claims | |

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2005/009592

Re Item IV : Lack of unity of invention

1. The application relates to a toner supply container for image forming apparatus and for detecting the amount of remaining toner. Substantially, the independent claims 1, 12, 18, 19, 23 define a sensor for detecting the remaining amount of toner and positioned with a container body. In particular, claims 1, 18 define a sensor and container body rotating integrally; claims 12, 19, the image forming apparatus and a detector, linked by wireless communication; and claim 23 defines an optical element and container body, both rotating, yet, well positioned with regard to an optical window.
2. The common features of the independent claims are well-known, cf. the prior art documents in the International search report cited below, each showing a toner supply container for image forming apparatus.

Re Item V : Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Following p.5 as filed, the subject-matter of the independent claims 1, 12, 18, 19, 23 shall detect the amount of remaining toner precisely ie successively without interruption, plus at the same time that toner is consumed.
2. With reference to the indications given in the International search report (ISR) the documents are cited because -
WO03087953 is considered to present the same information in Japanese, yet, published in time on 23.10.2003, as EP1498783 in English of the same patent family, and because (seiko epson) shows an image forming apparatus (10 in Fig.1) having developer supply modules (51,54 in Figs.2,5) with a memory chip (54a in Fig.5) and rotatable below an antenna (124b in Fig.2) whereby the remaining toner amount data in the respective container module is sent wirelessly to and from the apparatus; because -
US2003/0123889 (canon) shows an image forming apparatus (100 in Fig.1) having toner replenishing units (120Y, 120K in Fig.1) with memory chips (400 in Fig.1) for wirelessly storing the total amount of toner consumption; because -

US2001/0026692 (canon) shows an image forming apparatus (A in Fig.1) having a toner container (16 in Fig.1) with optical windows (14a in Fig.1) whereby the remaining toner amount that blocks light transmission around a toner carrying blade (12 in Fig.1), is successively shown on a display (70 in Fig.11); and because -

JP11038755 (ricoh) showing an image forming apparatus having a toner container with optical windows and another light transmission type sensor for detecting a toner amount, has been cited as best prior art document in the application.

3. For the above reasons the respective subject-matters of claims 1 to 6, 8, 10, 12 to 15, 18 to 22 do not appear to be novel in view of D1; similarly, none of claims 12 to 15, 17, 19 to 22 in view of D2.

It is noted that the interpretation of the claims is based on a broad understanding of their general wording and, thus, not limited to particular examples out of the description: eg, a sensor is anything that receives a signal and responds to it; similarly, a detecting means being any such member for extracting information; also, an accumulator is a register in a computer used for holding the results of a data transfer, plus, that a pressure sensor essentially measures a weight such as known from paragraphs [0231] to [0234] in D2, ...

4. The additional features of the other dependent claims 7, 9, 11 and 16 are considered to be standard design options based on a specification with further details such as in claims 7, 16, to arrange two or more sensors somewhere around the container body; in claim 11, to use a pressure sensor; or in claim 9, namely that an energy receiving portion being formed as an electrical contact portion in contrast to a combination of antenna and receiver as known from paragraph [0169] in D1.
5. Moreover, the wording of independent claim 23 seems to define any toner bottle with an optical window to have a look inside whether there is still sufficient toner or not. A skilled person is expected to provide a mounting construction and specially an engagement portion that permits the detection of the actually remaining amount of toner in use ie when mounted ie, eg, by a light for making visible a toner level from the outside. The additional use of a prism as defined in dependent claim 24 is to be expected in case of a need to bend the sight of line, eg, because of spatial restrictions.
6. Furthermore, even if a skilled person had to start from a toner supply container with optical windows as known from any of patents D3 or D4, and given the task to make

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2005/009592

use of a rotating toner bottle as an alternative, for the reasons given above any design engineer would arrive at a toner supply container as defined by the general wording of claims 23, 24.

7. Hence, the subject-matter as claimed does not appear to involve an inventive step.

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